

# Seed Saving Guide

This is a general, introductory chart to saving seeds in the garden. The list is arranged with those species with seed (or bulb/tuber) that is easiest to save in home gardens at the top of the chart and the most difficult to save at the bottom. "Isolation Distance" (column 5) is the distance in feet that any one variety within a given species has to be from another variety of the same species to prevent cross-pollination. "Inbreeding depression" (which shows up in "Notes," column 7) is an undesirable genetic condition, the higher the inbreeding depression the greater the number of plants should be grown of that particular variety or species if you are going to save its seed. Questions? Call PSM.

Vegetable	Life-Cycle	Pollination	Pollinator	Isolation Distance	Seed Longevity	Notes
Garlic <i>Allium sativum</i>	Grown as an Annual	Not applicable	Not applicable	0	Bulbs keep 6-8 mo at 40d	Plant cloves in the middle of October, mulch to protect against early winter freezing of soil. Cut or pull off flower heads when they appear. Harvest bulbs when tops fall over or when leaves wither. Air-dry bulbs, cut off roots and tops, store in a cool place.
Potato <i>Solanum tuberosum</i>	Grown as an Annual	Not applicable	Not applicable	0	Tubers keep 4-6 mo at 40d	Can produce a 25:1 return on planting stock. Plant in early May, 4" deep and 1.5' apart. Can be planted on soil surface and covered with 1' of straw mulch—potatoes will grow on the ground.
Bean <i>Phaseolus vulgaris</i>	Annual	Self	Self, Insects	0-100'	2-3 years	No inbreeding depression. Flowers are self-fertile; a small amount of insect cross-pollination does occur (up to 25%). Crossing that does occur will not show up in seed, but rather in the next year's crop. In areas where other pollen sources are abundant, growers often claim that beans do not cross at all (as pollinators are busy elsewhere); in some areas isolation may not be necessary.
Pea <i>Pisum sativum</i>	Annual	Self	Self, Insects	5-50'	2-3 years	No inbreeding depression. Most flowers are pollinated before opening, therefore crossing is minimal, although it does occur. One estimate is that crossing is less than 1%.
Basil <i>Ocimum basilicum</i>	Annual	Cross	Insects	150'	5 years	Ripe seed heads can be harvested and dried out of the sun while the plant continues to grow. Each flower contains 4 seeds, which are difficult to extract from the dried seed pod. Rub each raceme over a fine wire mesh.
Lettuce <i>Lactuca sativa</i>	Annual	Self	Self, Insects	10-25'	2-3 years	No inbreeding depression. Lettuce is largely self-pollinating; crossing between varieties can be as high as 5% for varieties grown side by side. Seeds ripen irregularly and are ready for harvest 12-24 days after flowering. To obtain the maximum amount of seed, the plants should be harvested daily during that period by shaking the seed heads into a large grocery sack. Alternately the entire head can be cut and put into a bag.
Spinach <i>Spinacia oleracea</i>	Annual	Cross	Wind	½ mile	2-3 years	Little inbreeding depression. Seed is either prickly or smooth, which corresponds with to the plant's leaf texture. Smoother seeds produce more wrinkled leaves. Plants bolt in response to long day-length and/or markedly different night/day temperatures. Each plant is male or female. Maintain a ratio of 1 male plant to 2 female, with a minimum of 2 male and 4 female (sex can't be determined until flowering).
Tomato <i>Lycopersicon lycopersicon</i>	Grown as an Annual	Self	Self, Insects	0-100'	4-10 years	No inbreeding depression. Generally tomato varieties do not cross-pollinate because the stigma never protrudes beyond the anthers. Beefsteak tomato flowers are more prone to crossing with other varieties because their stigma does protrude from the anthers.
Eggplant <i>Solanum melongena</i>	Grown as an Annual	Self, Cross	Insects	50'	5-7 years	Little inbreeding depression. Grow at least 6 plants for genetic diversity. Eggplant is largely self-fertile, but insects will visit. To save seed, let the fruits grow far past the edible stage, to dull purple-brown. Seeds from ready-to-eat eggplant will not be viable. See <i>Seed to Seed</i> for seed cleaning method.
Pepper <i>Capsicum annuum</i>	Grown as an Annual	Cross and/or Self	Insects	500'	2-3 years	Little inbreeding depression. Peppers are self-pollinating but bees commonly cause cross-pollination, so two varieties, say mild and hot, will cross if grown close together. This will not be evident until the next generation. Rubbing fresh flowers in the morning helps 'trip' the flower and induce pollination. Seeds are ripe when the fruit is fully mature.
Onion <i>Allium cepa</i>	Biennial	Cross	Insects	1500' to 1 mile	1 year (50% for 2 yrs)	Subject to inbreeding depression; at least 10 plants should be used for seed. Onions are biennials; bulbs must be planted in spring for summer seed. Onion flowers cannot self-pollinate because the anthers shed pollen before the stigma ripens. Insects will pollinate; if more than one variety is grown then bagging and hand pollination is necessary. Flower heads open over an extended period. Onions do not cross with chives or leeks. Seed heads shatter easily when dry.
Carrot <i>Daucus carota</i>	Biennial	Cross	Insects	½ mile	3-5 years	Flower heads (umbels) develop irregularly over 30 days; temps over 100d can damage seeds. Store roots over winter and replant in spring, use at least 10 plants for producing seed. Parsnip and parsley seed production is the same as for carrot seed. Coriander/cilantro readily bolts to flower and seed the first year of growth.
Beet/Chard <i>Beta vulgaris</i>	Biennial	Cross	Wind	½ mile	3-5 years	All beets and chards will cross with one another. Beet pollen is light and can travel 5 miles. To over-winter cut tops to 2" and roots to 6", pack roots in damp sand or sawdust, cover tops with sawdust or leaves. In the spring replant a minimum of 6 beets.
Squash/ Pumpkin <i>Curcubita pepo,</i> <i>C. maxima</i> & <i>C. moschata</i>	Annual	Cross and/or Self	Insects	1500'	4-6 years	There three primary species of squash, each with numerous varieties: <i>Curcubita maxima</i> includes many common winter squash: buttercup, hubbard, banana, pumpkin, etc. <i>C. moschata</i> includes all the butternuts. <i>C. pepo</i> includes zucchini, crookneck, spaghetti and acorn squash. All varieties within a species will easily cross-pollinate and produce unpredictable offspring. To achieve varietal purity female flowers must be hand-pollinated and then taped shut. The technique is described in <i>Seed to Seed</i> , which recommends growing a minimum of 6 plants per variety to maintain genetic diversity, with 12-20 plants much preferred.
Broccoli/ Cauliflower <i>Brassica oleracea</i>	Biennial-Annual?	Cross (often self-sterile)	Insects	½ mile	3-5 years	Subject to inbreeding depression. The Mustard Family can be difficult for the garden seed saver. All varieties within each species cross with one another. It is difficult to store broccoli & cauliflower over-winter indoors; even in cool temps it rots. For seed, allow the central head of broccoli to bloom. Individual plants are self-sterile. To maintain genetic diversity, 6 plants and preferably 20 should be grown for seed.
Cabbage <i>Brassica oleracea</i>	Biennial	Cross (often self-sterile)	Insects	½ mile	3-5 years	Subject to inbreeding depression. The Mustard Family can be difficult for the garden seed saver. All members within each species cross with one another. In our climate cabbage must be stored indoors over winter, in a cool, dark place, leaving roots on. Will keep 2-4 months at 32-40 degrees and high humidity. After planting back outside the following spring, cut a shallow X in the top of the head, from which the seed stalk will emerge. At least 2 cabbages must be grown as individual plants are self-sterile; 6 plants would be a minimum for healthy genetic diversity.
Sunflower <i>Helianthus annuus</i>	Annual	Cross	Insects	½ mile	7 years	Subject to inbreeding depression. Some varieties are self-compatible (will pollinate themselves) and others are self-incompatible. At least 40 good plants needed to maintain genetic heterogeneity.
Corn <i>Zea mays</i>	Annual	Cross and/or Self	Wind	½ mile	2-3 years	Corn suffers from extreme inbreeding depression. A population of 200 plants (100 would be a bare minimum) is necessary for saving seed. Pollen is wind-transported and travels long distances, thus the ½ mile isolation factor